

## CLAIMS

I claim:

- 5      1.      A method for calibrating an infrared sensing device, comprising the steps of:
- 10                      a)      detecting randomly reflected emitted infrared radiation from an infrared emitter by an infrared detector, said infrared detector thereby sending an output to a control module;
- 15                      b)      storing a range of standard infrared detector output values in said control module;
- c)      comparing an infrared detector output value indicative of the detected radiation to said range of standard output values;
- 20                      d)      determining an infrared emitter input value based on the comparing step; and
- e)      storing said infrared emitter input value in said control module as a calibration standard.
- 25      2.      The method according to Claim 1 wherein said control module determines whether emitted infrared radiation from said infrared emitter is at a maximum or a minimum.
- 30      3.      The method according to Claim 2 wherein, if said emitted infrared radiation is at a maximum or a minimum, said control module provides an error indication.
4.      The method according to Claim 1 wherein, if detected randomly reflected emitted infrared radiation is too high, compared to said range of standard output values, said control module will reduce input to said infrared emitter incrementally.

5. The method according to Claim 1 wherein, if detected randomly reflected emitted infrared radiation is too low, compared to said range of standard output values, said control module will increase input to said infrared emitter incrementally.
- 5 6. The method according to Claim 1 wherein, if detected randomly reflected emitted infrared radiation is neither too high nor too low, compared to said range of standard output values, said control module will adjust said input value to said infrared emitter to compensate for a change in output of a power source which provides power to said infrared emitter.
- 10 7. The method according to Claim 1 wherein said control module has a signal processor to measure said output of said infrared detector, to increase or decrease said input value to said infrared emitter, to measure said input value to said infrared emitter, and to send said emitter input value to a memory software database in said control module.
- 15 8. The method according to Claim 1 wherein said control module increases or decreases output of said infrared emitter by altering electric current or voltage or a combination thereof of an input value to said infrared emitter.
- 20 9. The method according to Claim 1 wherein said infrared emitter and said infrared detector are contained within a collar of an infrared automatic fluid dispensing system.
10. A method for calibrating an infrared sensing device, comprising the steps of:
- 25 a) detecting randomly reflected infrared radiation by an infrared detector;
- b) measuring whether the detected radiation is within a standard range of output values; and
- 30 c) determining an infrared emitter input value to maintain said output within said standard range.

11. The method according to Claim 10 further comprising the step of storing said infrared emitter input value as a calibration standard.
- 5 12. A system for calibrating infrared sensing devices, comprising:
- a) an infrared emitter configured to emit infrared radiation and an infrared detector configured to generate an output in response to a reflection of the emitted infrared radiation;
  - 10 b) a control module configured to store calibration data, including a standard predetermined infrared detector output range of values for randomly reflected infrared radiation, and to compare said output from said infrared detector to said predetermined infrared detector output range; and
  - 15 c) a calibration manager configured to provide an infrared emitter input value for said infrared emitter to produce an infrared emitter radiation output so that output from said infrared detector receiving said randomly reflected infrared radiation is within said predetermined infrared detector output range in said control module.
- 20 13. The system according to Claim 12 wherein said control module is configured to further store said infrared emitter input value in said control module memory.
- 25 14. The system according to Claim 13 further comprising said control module reprogramming itself to use said infrared emitter input value as a calibration standard for infrared detector output.
15. The system according to Claim 14 wherein said control module has a signal processor configured to measure said output of said infrared detector, to increase or decrease infrared

radiation output of said infrared emitter, to measure said infrared emitter input value, and to send said emitter input value to calibration data in said control module.

- 5      16.      The system according to Claim 15 wherein said infrared emitter and said infrared detector are contained within a collar for calibration of an infrared automatic sensing flow system.

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